Amendments to the Claims

Listing of Claims:

Claims 1 - 21 (canceled).

Claim 22 (new). A process for pyrolyzing hydrocarbon-containing waste products which comprises:

providing only one pyrolysis furnace having an openable bottom, an upper end forming a dome, and a double-wall with a helically arranged hot-air helical duct; a discharge pipe leading vertically out the furnace dome; a loading station outside the furnace; a receiving device initially located at the loading station; and an unloading station;

introducing a material to be pyrolyzed onto the receiving device;

subsequently introducing the receiving device from below into the pyrolysis furnace through the open bottom and thereby tightly closing the bottom of the pyrolysis furnace;

heating the furnace to a pyrolysis temperature of approximately between 450°C and 550°C with burners generating hot air passing helically from the bottom upward in the pyrolysis furnace through the helically arranged hot-air helical duct;

pyrolyzing completely the material thereby producing in-part pyrolysis gases and residues;

extracting the hot air at the upper end of the furnace;

discharging the pyrolysis gases via the discharge pipe;

after pyrolysis has concluded completely, opening the bottom and removing downward the receiving device;

moving the receiving device into the unloading station; and

discharging the residues at the unloading station.

Claim 23 (new). The method according to claim 22, which further comprises:

moving another receiving device laden with material to be pyrolyzed from the loading station to the furnace; and

inserting the other receiving device into the latter.

Claim 24 (new). The process according to claim 22, which comprises warming the furnace on an interim basis while the furnace is being loaded and unloaded from below with the outgoing hot air from the furnace.

Claim 25 (new). The process according to claim 22, which further comprises using a heat-exchanger to extract heat from the hot air.

Claim 26 (new). The process according to claim 22, wherein the material is used tires.

Claim 27 (new). The process according to claim 26, which further comprises:

providing a vertical, upwardly facing receiving rod on the receiving device; and

stacking used tires on the receiving rod.

Claim 28 (new). The process according to claim 22, wherein the material is bulk material.

Claim 29 (new). The process according to claim 28, wherein the bulk material is agricultural and forestry products.

Claim 30 (new). The process according to claim 28, which further comprises:

providing a receiving container;

filling the receiving container with the bulk material; and

placing the receiving container on the receiving device.

Claim 31 (new). The process according to claim 30, which further comprises stacking a plurality of the receiving containers vertically on top of one another.

Claim 32 (new). The process according to claim 27, which further comprises:

tilting the receiving device 30° to 90° with respect to the vertical in the unloading station;

shaking the materials to remove solid pyrolysis residues that are capable of flowing;

retaining metal constituents on the receiving rods; and

pulling the metal constituents off the receiving rods.

Claim 33 (new). The process according to claim 30, which further comprises:

in the unloading station, removing the receiving containers from the receiving device in a vertical direction;

tilting and shaking solid pyrolysis residues in the receiving containers to discharge the solid pyrolysis residues;

reloading the solid pyrolysis residues in the receiving containers; and

reinserting the receiving containers into a receiving device.

Claim 34 (new). The process according to claim 30, which further comprises:

in the unloading station, removing the receiving containers from the receiving device in a vertical direction;

sucking solid pyrolysis residues in the receiving containers to discharge the solid pyrolysis residues;

reloading the solid pyrolysis residues in the receiving containers; and

reinserting the receiving containers into a receiving device.

Claim 35 (new). A plant for carrying out the process according to claim 22, comprising:

only one pyrolysis furnace having a bottom; an upper end with an extractor; a furnace dome disposed at said upper end; a double wall heated from the outside by a heater producing hot air, an inner wall of said double wall being a cylindrical furnace inner wall equipped with heat–emitting plates facing radially inward; helical transverse walls leading from said bottom upward and forming a helical duct for the

hot air, the hot air passing helically from the bottom upward and being extracted at said upper end by said extractor; a discharge pipe for discharging pyrolysis gases leading vertically out of said furnace dome; a vertically lowerable base for lowering and raising to load and unload said furnace vertically, from therebelow.

Claim 36 (new). The plant according to claim 35, wherein said heater is electric heater, an oil powered heater, a gas powered heater, or a combination thereof.

Claim 37 (new). The plant according to claim 35, including:

an upper hot–air pipe connected to said exchanger; and

a supply pipe connected to said upper hot-air pipe and said furnace.

Claim 38 (new). The plant according to claim 35, wherein the helical transverse walls of the helical duct are only welded onto the furnace inner wall and are connected to a furnace outer wall of said double wall and thermally insulated, said inner wall and said outer wall include fire clay near said heater, and a thermally insulating jacket covers said furnace.

Claim 39 (new). The plant according to claim 35, wherein said heat-emitting plates are radiation ribs.

Claim 40 (new). A method of extinguishing a fire, which comprises adding pyrolyzed carbon to the fire.